

DEPARTMENT OF TRANSPORTATION

DES-OE MS #43
1727 30TH Street, 2ND Floor
Sacramento, CA 95816



**** WARNING ** WARNING ** WARNING ** WARNING ****
This document is intended for informational purposes only.

Users are cautioned that California Department of Transportation (Department) does not assume any liability or responsibility based on these electronic files or for any defective or incomplete copying, excerpting, scanning, faxing or downloading of the contract documents. As always, for the official paper versions of the bidders packages and non-bidder packages, including addenda write to the California Department of Transportation, Plans and Bid Documents, Room 0200, P.O. Box 942874, Sacramento, CA 94272-0001, telephone (916) 654-4490 or fax (916) 654-7028. Office hours are 7:30 a.m. to 4:15 p.m. When ordering bidder or non-bidder packages it is important that you include a telephone number and fax number, P.O. Box and street address so that you can receive addenda.

April 4, 2003

04-SF-80-13.4,13.8
04-0120E4
ACBRIM-080-1(094)N

Addendum No. 3

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in THE CITY AND COUNTY OF SAN FRANCISCO AT YERBA BUENA ISLAND.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on April 15, 2003.

This addendum is being issued to revise the Project Plans, the Notice to Contractors and Special Provisions, and the Federal Minimum Wages with Modification Number 28 dated 3-7-03.

Project Plan Sheet 8A is added. A half-sized copy of the added sheet is attached for addition to the project plans.

Project Plan Sheets 52 and 72 are revised. Half-sized copies of the revised sheets are attached for substitution for the like-numbered sheets.

On Project Plan Sheet 17, under Notes, the fourth note is revised as follows:

"Fender for tower foundation is part of the Self-Anchored Suspension Bridge (Superstructure and Tower) contract (by others)."

On Project Plan Sheet 50, Detail F, the callout "CJP" is revised to read "80%PJP."

On Project Plan Sheet 50, the notes number "1" and "4" are revised as follows:

"1. All reinforcing bars shown shall be epoxy-coated reinforcement, except as noted."

"4. All #29 bars ending at pile sleeves shall be welded to pile sleeves as shown in Detail F, Type 1 or Type 2. #29 bars welded to pile sleeves shall not be epoxy-coated."

On Project Plan Sheet 61, detail "ANCHOR BOLT ELEVATION VIEW," "AT TOP PLATE OF PILE," the callout "Anchor bolt with tightly wrapped 56kg/m building paper to debond from concrete, typ (see Note 4)." is revised to read "Anchor bolt with tightly wrapped 2 layers of 7 kg building paper to debond from concrete, typ (see Note 4)."

In the Special Provisions, Section 2-1.02C, "SMALL BUSINESS AND DISABLED VETERAN BUSINESS ENTERPRISE UTILIZATION AND REPORTING," is added as attached.

04-SF-80-13.4,13.8
04-0120E4
ACBRIM-080-1(094)N

In the Special Provisions, Section 3, "AWARD AND EXECUTION OF CONTRACT," the third paragraph is revised as follows:

"Bids in which the number of working days bid for completion of the work exceed 450 will be considered non-responsive and will be rejected."

In the Special Provisions, Section 4, "BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES," the fourth paragraph is revised as follows:

"The Contractor shall pay to the State of California the sum of \$100,000 per day, for each and every calendar day's delay in finishing the work after expiration of the number of working days bid."

In the Special Provisions, Section 5-1.12, "PROJECT INFORMATION," subsection "INFORMATION HANDOUT," Item "D." of subsection "District Materials Information" is revised as follows:

"D. SFOBB East Span Survey Info (revised 12/31/2002)"

In the Special Provisions, Section 5-1.12, "PROJECT INFORMATION," subsection "INFORMATION HANDOUT," Item "H." of subsection "District Materials Information" is added as follows:

"H. United States Coast Guard Licenses "

In the Special Provisions, Section 5-1.19, "AREAS FOR CONTRACTOR'S USE," is revised as attached.

In the Special Provisions, Section 10-1.06, "COOPERATION," Item "5" of the third paragraph is revised as follows:

"5. Contract No. 04-0120P4 reconstructing YBI structures and providing demolition of Building No. 75, in the City and County of San Francisco, on Route 80, at Yerba Buena Island, between KP 12.6 (PM 7.8) and KP 13.2 (PM 8.2)"

In the Special Provisions, Section 10-1.06, "COOPERATION," Items "15" and "16" are added to the third paragraph as follows:

- "15. Contract No. 04-0120Q4 constructing United States Coast Guard Road Relocation, Building No. 75 Demolition, Utility Relocation and Archaeological Recovery in the City and County of San Francisco, on Route 80, at Yerba Buena Island, between KP 12.7 (PM 7.9) and KP 13.0 (PM 8.1).
- 16. Contract No. 04-0120R4 constructing the YBI South-South Detour in the City and County of San Francisco, on Route 80, at Yerba Buena Island, between KP 12.6 (PM 7.8) and KP 13.2 (PM 8.2)"

In the Special Provisions, Section 10-1.08, "PROGRESS SCHEDULE (CRITICAL PATH METHOD)," is revised as attached.

In the Special Provisions, Section 10-1.23, "PILING," subsection "MATERIALS," subsection "Acceptance Testing and Mitigation," the fourth paragraph is revised as follows:

"Inspection pipes shall be placed as shown on the plans 75 mm clear of the vertical reinforcement. The inspection pipes shall be placed to provide the maximum diameter circle that passes through the centers of the inspection pipes while maintaining the clear spacing required herein. The pipes shall be installed in straight alignment, parallel to the main reinforcement, and securely fastened in place to prevent misalignment during installation of the reinforcement and placing of concrete in the hole."

04-SF-80-13.4,13.8
04-0120E4
ACBRIM-080-1(094)N

In the Special Provisions, Section 10-1.30, "STEEL STRUCTURES," subsection "FABRICATION," subsection "Tower Anchor Bolts," the first paragraph is replaced with the following paragraphs:

"Steel fasteners, designated on the plans as A 354, Grade BC, and A 354, Grade BD, shall conform to the requirements of ASTM Designation: A 354, Grade BC and Grade BD, respectively. Steel fastener components for steel fasteners designated as A 354, Grade BC and Grade BD shall include a bolt, nut and hardened washer. Nuts for steel fasteners shall conform to Section 55-2.01, "Description," of the Standard Specifications.

Steel fasteners designated on the plans as A 354, Grade BD shall be dry blast cleaned in accordance with the provisions of Surface Preparation Specification No. 10, "Near White Blast Cleaning," of the "SSPC: The Society for Protective Coatings".

Steel fasteners designated on the plans as A 354, Grade BC, and A 354, Grade BD, shall be galvanized in accordance with the requirements in Section 75-1.05, "Galvanizing," of the Standard Specifications and shall conform to the requirements in ASTM Designation: A123 for bolts and ASTM Designation: A153 for nuts and hardware. Steel fastener assemblies designated as A354, Grade BD, shall be galvanized within 4 hours of being dry blast cleaned.

The Contractor shall submit certified test reports showing that the A 354 fasteners conform to the provisions in ASTM Designation: A 143."

In the Proposal and Contract, the Engineer's Estimate Item is revised.

To Proposal and Contract book holders:

Attached are the following CD-ROMs: "Contract No. 04-0120E4 Addendum CD and Contract No. 04-0120E4 CD 8"

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the proposal.

Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This office is sending this addendum by UPS overnight mail to Proposal and Contract book holders to ensure that each receives it. A copy of this addendum and the modified wage rates are available for the contractor's use on the Internet Site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY:

REBECCA D. HARNAGEL, Chief
Office of Plans, Specifications & Estimates
Office Engineer

Attachments

2-1.02C SMALL BUSINESS AND DISABLED VETERAN BUSINESS ENTERPRISE UTILIZATION AND REPORTING

Contractors, subcontractors, suppliers and service providers who qualify are requested to apply for certification as a "Small Business" or a "Disabled Veteran Business Enterprise" by submitting an application to the Department of General Services, Office of Small Business and DVBE Certification, 707 3rd Street, West Sacramento, CA 95605 Telephone No. (916) 375-4940 or (800) 559-5529.

Attention is directed to the provisions of the Small Business Procurement and Contract Act, Government Code Section 14835 et seq., and Title 2, California Code of Regulations, Section 1896 et seq. regarding certification as a Small Business, and the provisions of Military and Veterans Code Section 999 et seq. and Title 2, California Code of Regulation, Section 1896.60 et seq. regarding certification as a Disabled Veteran Business Enterprise.

By Executive Orders Nos. D-37-01 and D-43-01 the Governor has declared that the policy of the State is to promote the use and participation of Small Businesses and Disabled Veteran Business Enterprises in the State contracting process. The Executive Orders seek pursuit of an annual 25 percent Small Business participation level, and the statutory 3 percent Disabled Veteran Business Enterprise participation level. Because this project involves Federal funding, the State Small Business preference and the State Disabled Veteran Business Enterprise goal do not apply. However, the Department desires to encourage the highest possible participation of Small Businesses and Disabled Veteran Business Enterprises to achieve the goals as stated in the Executive Orders.

It is requested that the Contractor provide, on a quarterly basis, and within 30 days of contract acceptance, reports summarizing the participation of State certified Small Businesses and Disabled Veteran Business Enterprises used in the performance of this contract. To qualify for payment, it is requested that each report include the contract number, Contractor name, business address, business telephone number, and name of person preparing the report, and that the report list payments to each Small Business or Disabled Veteran Business Enterprise by item number, description of work performed and materials provided, business name, Small Business or Disabled Veteran Business Enterprise certification number, amount of payment, date payment was made, and cumulative payment.

For each report submitted to the Engineer, the Contractor will receive \$2,500. The amount paid for submitting each report shall include full compensation for doing all the work involved in preparing and submitting the report, including accounting, tracking, maintaining, and reporting certified Small Business and Disabled Veteran Business Enterprise use.

5-1.19 AREAS FOR CONTRACTOR'S USE

Attention is directed to the requirements specified in Section 7-1.19, "Rights in Land and Improvement," of the Standard Specifications and these special provisions.

The highway right of way shall be used only for purposes that are necessary to perform the required work. The Contractor shall not occupy the right of way, or allow others to occupy the right of way, for purposes which are not necessary to perform the required work.

No area is available within the contract limits for the exclusive use of the Contractor. However, temporary storage of equipment and materials on State property may be arranged with the Engineer, subject to the prior demands of the State maintenance forces and to other contract requirements. Use of the Contractor's work areas and other State-owned property shall be at the Contractor's own risk. The State shall not be held liable for the damage to or loss of materials or equipment located within these areas.

Access to the Contractor's area at the east end of YBI will pass through areas designated for use by Contracts 04-0120P4, 04-0120Q4 and 04-0120R4. Access through these areas will be available to the Contractor, however, access must be coordinated with the Engineer and other Contractors.

Contract 04-012024 will be conducting marine operations in areas adjacent to the contract limits. Contractor marine operations shall be coordinated with the Engineer and Contract 04-012024 contractor, in addition to requirements specified elsewhere in these special provisions.

The Contractor's access to/from the work area may be limited by the closures of the Westbound YBI on-ramp to I-80 and Southgate Road during the contract period. The Contractor will have access to the work during these closures via posted detours.

Toll plaza parking lots shall not be used for the Contractor's employees private vehicles and the Contractors equipment and vehicles.

The Contractor shall remove the equipment, materials, and rubbish from the work areas and other State-owned property which the Contractor occupies and shall leave the areas in a presentable condition, in conformance with the provisions in Section 4-1.02, "Final Cleaning Up," of the Standard Specifications.

The Contractor shall secure, at the Contractor's own expense, areas required for storage of plant, equipment, and materials, or for other purposes if sufficient area is not available to the Contractor within the contract limits.

10-1.08 PROGRESS SCHEDULE (CRITICAL PATH METHOD)

Progress schedules will be required for this contract. Progress schedules shall utilize the Critical Path Method (CPM). Attention is directed to "Cooperation," and "Obstructions" of these special provisions. Nothing in these special provisions shall be construed as relieving the Contractor from the responsibilities specified in Section 7, "Legal Relations and Responsibility," of the Standard Specifications. All schedules are required to reflect a reasonable plan to execute the contract scope of work. The Contractor shall be solely responsible for the content of the schedules and the execution of all contract requirements.

The provisions in Section 8-1.04, "Progress Schedule," of the Standard Specifications shall not apply.

DEFINITIONS

The following definitions apply to this section "Progress Schedule (Critical Path Method)":

- A. Activity: Any task, or portion of a project, which takes time to complete.
- B. Baseline Schedule: The initial CPM schedule representing the Contractor's original work plan, as accepted by the Engineer.
- C. Controlling Operation: The activity considered at the time by the Engineer, within that series of activities defined as the critical path, which if delayed or prolonged, will delay the time of completion of the contract.
- D. Critical Path: The series of activities, which determines the earliest completion of the contract (Forecast Completion Date). This is the longest path of activities having the least amount of float.
- E. Critical Path Method: A mathematical calculation to determine the earliest completion of the contract represented by a graphic representation of the sequence of activities that shows the interrelationships and interdependencies of the elements composing a project.
- F. Contract Completion Date: The current extended date for completion of the contract shown on the weekly statement of working days furnished by the Engineer in accordance with Section 8-1.06, "Time of Completion," of the Standard Specifications.
- G. Early Completion Time: The difference in time between the current contract completion date and the Contractor's scheduled early forecast completion date as shown on the accepted baseline schedule, or schedule updates and revisions.
- H. Float: The amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any activity or group of activities in the network.
- I. Scheduled Completion Date: The completion date of the last scheduled work activity identified on the critical path.
- J. Free Float: The amount of time an activity can be delayed before affecting a subsequent activity.
- K. Hammock Activity: An activity added to the network to span an existing group of activities for summarizing purposes.
- L. Milestone: A marker in a network, which is typically used to mark a point in time or denote the beginning or end of a sequence of activities. A milestone has zero duration, but will otherwise function in the network as if it were an activity.
- M. Revision: A change in the future portion of the schedule that modifies logic, adds or deletes activities, or alters activities, sequences, or durations.
- N. Tabular Listing: A report showing schedule activities, their relationships, durations, scheduled and actual dates, and float.
- O. Total Float: The amount of time that an activity may be delayed without affecting the total project duration of the critical path.
- P. Update Schedule: The modification of the CPM progress schedule through a regular review to incorporate actual progress to date by activity and to reflect the current plan to complete the project.
- Q. Time Scaled Logic Diagram: A schematic display of the logical relationships of project activities, drawn from left to right to reflect project chronology with the positioning and length of the activity representing its duration.
- R. Bar Chart (Gantt Chart): A graphic display of scheduled-related information, activities or other project elements are listed down the left side of the chart, dates are shown across the top, and activity durations are shown as date-placed horizontal bars.
- S. Near Critical Path: A path having 30 working days or less of total float.

- T. Delay: The time period during which some part of the construction project has been extended beyond what was originally planned due to unanticipated circumstances. A delay occurs when the respective activity or group of activities, requiring additional time, impacts the completion of the successor construction activity and also extend the scheduled contract completion date.
- U. Data date: The day after the date through which a schedule is current. Everything occurring earlier than the data date is "as-built" and everything on or after the data date is "planned."
- V. Narrative Report: A document submitted with each schedule that discusses topics related to project progress and scheduling.
- W. State Owned Float Activity: The activity documenting time saved on the critical path by actions of the State. It is the last activity prior to the scheduled completion date.
- X. Time Impact Analysis: A schedule and narrative report developed specifically to demonstrate what effect a proposed change or delay has on the current scheduled completion date.

The Engineer will schedule and conduct a Preconstruction Scheduling Conference with the Contractor's Project Manager and Construction Scheduler within seven days after the bidder has received the contract for execution. At this meeting, the requirements of this section of the special provisions will be reviewed with the Contractor. The Contractor shall be prepared to discuss its schedule methodology, proposed sequence of operations, the activity identification system for labeling all work activities, the schedule file numbering system, and any deviations it proposes to make from the Stage Construction Plans. The Engineer will submit a scheduling shell project on electronic medium, displaying an activity code dictionary consisting of fields populated with the Caltrans scheduling codes, filters, layouts, report formats, contract milestones, and a resource dictionary. The Contractor shall utilize these codes, filters, layouts, etc. and may add other codes as necessary, to group and organize the work activities. Periodically the Engineer may request the Contractor to utilize additional filters, layouts or activity codes to be able to further group or summarize work activities.

Also, the Engineer and the Contractor shall review the requirements for all submittals applicable to the contract and discuss their respective preparation and review durations. All submittals and reviews are to be reflected on the Interim Baseline Schedule and the Baseline Schedule.

GENERAL SCHEDULE ITEMS

The following items are applicable to all schedules:

- A. Activity identification numbers for deleted activities are not to be reused. Added activities shall be assigned a new and unique activity identification number.
- B. Activity descriptions are not to be revised when the scope of the activity is changed. The existing activity shall be deleted and a new activity shall be added.
- C. When forecasting new durations for activities that have not started, the original duration field shall be revised.
- D. All Resource requirements shall be included for all new construction activities.
- E. All activities shall have durations of not more than 20 working days and not less than one working day unless permitted otherwise by the Engineer.
- F. All activities in the schedule, with the exception of the first and last activities, shall have a minimum of one predecessor and a minimum of one successor.
- H. Negative lags shall not be assigned for any activity relationships.
- I. All out of sequence activities identified on the scheduling and leveling report shall be reviewed and their relationships either verified or changed.
- J. The Contractor shall not add job inefficiencies or weather days to a project calendar without prior approval by the Engineer.
- K. Offsite fabrication and material/equipment delivery activities shall be sufficiently detailed to allow monitoring of schedule progress.
- L. The Contractor shall provide to the Engineer two copies of all schedules on electronic medium, together with printed copies of the network diagrams or bar charts and tabular reports described under "Project Schedule Reports", and the Schedule Narrative Report.

The Engineer's review and acceptance of schedules shall not waive any contract requirements and shall not relieve the Contractor of any obligation thereunder or responsibility for submitting complete and accurate information. Schedules that are rejected shall be corrected by the Contractor and resubmitted to the Engineer within 5 working days of notification by the Engineer, at which time a new review will begin.

Errors or omissions on schedules shall not relieve the Contractor from finishing all work within the time limit specified for completion of the contract. If, after a schedule has been accepted by the Engineer, either the Contractor or the Engineer discover that any aspect of the schedule has an error or omission, it shall be corrected by the Contractor on the next update schedule.

INTERIM BASELINE SCHEDULE

Within 15 days after approval of the contract, the Contractor shall submit to the Engineer an Interim Baseline Project Schedule which will serve as the progress schedule for the first 120 days of the project, or until the Baseline Schedule is accepted, whichever is sooner. The Interim Baseline Schedule shall utilize the critical path method of scheduling. The Interim Baseline Schedule shall depict how the Contractor plans to perform the work for the first 120 days of the contract. Additionally, the Interim Baseline Schedule shall show all required submittals, working drawings, and review periods, and shall provide for all permits, and other non-work activities necessary to begin the work. The Contractor shall also submit a Summary Schedule, reflecting the duration of the contract, grouped by major areas of the project identified by the scheduling codes provided in the Caltrans scheduling codes or as defined by the Engineer. This summary schedule is for information purposes only and is to be used as a reference until the Baseline Schedule is accepted.

The Interim Baseline Schedule submittal shall include the data files used to generate the schedule on electronic medium.

The Engineer shall be allowed 10 days to review the schedule and to provide comments, including the Contractor's application of the supplied activity codes. All comments are to be implemented into the Baseline Schedule. Re-submittal of the Interim Baseline Schedule is not required. Late review of the Interim Baseline Schedule shall not restrain the submittal of the Baseline Schedule. No contract payments shall be made to the Contractor until a Interim Baseline Schedule is submitted in accordance with the above requirements.

BASELINE SCHEDULE

Within 45 days, after approval of the contract, the Contractor shall submit to the Engineer a Baseline Project Schedule including the incorporation of all comments provided to the Interim Baseline Schedule. The Baseline Schedule shall have a data date of the day prior to the first working day of the contract. The schedule shall not include any actual start dates, actual finish dates, or constraint dates (except for Contract Milestone dates) and activities scheduled to start or finish between the data date and the run date shall reflect dates that can be attained. The Baseline Schedule shall meet interim milestone dates, contract milestone dates, stage construction requirements, internal time constraints, show logical sequence of activities, and must not extend beyond the number of days originally provided for in the contract.

All task activities shall be assigned to a project calendar. Each calendar shall identify a workweek, and holidays. Different calendars shall be used for work activities that occur on different work schedules. Activities for the preparation and the review of submittals; offsite fabrication, and material/equipment deliveries are to be assigned to the same calendar unless approved by the Engineer. All non-activity periods for Environmental work restrictions shall be identified with the appropriate calendars.

The Baseline CPM Schedule submitted by the Contractor shall have a sufficient number of activities to assure adequate planning of the project and to permit monitoring and evaluation of progress and the analysis of time impacts. The Baseline Schedule shall depict how the Contractor plans to complete the whole work involved, and shall show all activities that define the critical path. Multiple critical paths and near-critical paths shall be kept to a minimum, as determined by the Engineer.

State owned float shall be considered a resource for the exclusive use of the State. The Engineer may accrue State owned float by the early completion of review of any type of required submittal when it saves time on the critical path. The Engineer will document State owned float by directing the Contractor to update the State owned float activity on the next schedule update. The Contractor shall include a log of the action on the State owned float activity and include a discussion of the actions in the narrative report. The Engineer may use State owned float to mitigate past or future State delays by offsetting potential time extensions for contract change work orders.

The Contractor shall be responsible for assuring that all work sequences are logical and the network shows a coordinated plan for complete performance of the work. Failure of the Contractor to include any element of work required for the performance of the contract in the network shall not relieve the Contractor from completing all work within the time limit specified for completion of the contract. If the Contractor fails to define any element of work, activity or logic, the Contractor in the next monthly update or revision of the schedule shall correct it.

The Baseline Schedule shall be supplemented with resource allocations for every task activity to a level of detail that facilitates report generation based on labor craft and equipment class for the Contractor and subcontractors.

The Contractor shall optimize labor to reflect a reasonable plan for accomplishing the work of the contract and to assure that resources are not over committed in concurrent activities. The Contractor shall not create hammock activities for the purpose of resources loading. The Baseline Schedule shall not attribute negative float to any activity.

Along with the baseline progress schedule, the Contractor shall also submit to the Engineer time-scaled resource histograms of the labor crafts and equipment to be utilized on the contract.

Each schedule submitted to the Engineer will comply with all limits imposed by the contract, with all specified intermediate milestone and contract completion dates, and with all constraints, restraints or sequences included in the contract. The degree of detail shall include factors including, but not limited to:

- A. Physical breakdown of the project;
- B. Contract milestones and completion dates, substantial completion dates, constraints, restraints, sequences of work shown in the contract, the planned substantial completion date, and the final completion date;
- C. Type of work to be performed, the sequences, and the major subcontractors involved;
- D. All purchases, submittals, submittal reviews, manufacture, fabrication, tests, delivery, and installation activities for all major materials and equipment, including submittal of requests for audits of manufacturers and fabricators in conformance with "Manufacturing and Fabrication Qualification Audit for Materials" of these special provisions;
- E. Preparation, submittal and approval of shop and working drawings and material samples, showing time, as specified elsewhere, for the Engineer's review. The same time frame shall be allowed for at least one resubmittal on all major submittals so identified in the contract documents.
- F. Identification of interfaces and dependencies with preceding, concurrent and follow-on contractors, railroads, and utilities as shown on the plans or specified in the specifications;
- G. Identification of each and every utility relocation and interface as a separate activity, including activity description and responsibility coding that identifies the type of utility and the name of the utility company involved;
- H. Actual tests, submission of test reports, and approval of test results;
- I. All start-up, testing, training, and assistance required under the Contract;
- J. Punchlist and final clean-up;
- K. Identification of any manpower, material, or equipment restrictions, as well as any activity requiring unusual shift work, such as double shifts, 6-day weeks, specified overtime, or work at times other than regular days or hours;
- L. Identification of each and every ramp closing and opening event as a separate one day activity, including designation by activity coding and description that it is a north-bound, south-bound, east-bound, west-bound, and entry or exit ramp activity;
- M. Separate resources graphs for the Contract's labor, equipment and critical path labor, with an accompanying analysis of each and explanation for any variances;
- N. Equipment and labor shall be differentiated by a cost account code within the resource dictionary.
- O. State owned float as the last activity in the schedule, at the end of which is the Scheduled Completion Date.

The Engineer will be allowed 15 days to review and accept or reject the baseline project schedule submitted. Rejected schedules shall be resubmitted to the Engineer within 5 days, at which time a new 15-day review period by the Engineer will begin.

PROJECT SCHEDULE REPORTS

Schedules submitted to the Engineer including Interim Baseline, Baseline, and update schedules shall include time scaled network diagrams or bar charts in a layout format requested by the Engineer. The network diagrams or bar charts submitted to the Engineer shall also be accompanied by four computer-generated mathematical analysis tabular reports for each activity included in the project schedule. The reports (215-mm x 915-mm size) shall include a network diagram report showing the activity columns only, a predecessor and successor report, a resource report (Interim Baseline and Baseline Schedules), and a scheduling and leveling calculation report. The network diagram reports shall include, at a minimum, the following for each activity:

- A. Activity number and description;
- B. Activity codes;

- C. Original, actual and remaining durations;
- D. Early start date (by calendar date);
- E. Early finish date (by calendar date);
- F. Actual start date (by calendar date);
- G. Actual finish date (by calendar date);
- H. Late start date (by calendar date);
- I. Late finish date (by calendar date);
- J. Identify activity calendar ID;
- K. Total Float and Free Float, in work days; and
- L. Percentage complete.

Network diagrams or bar charts shall be sorted and grouped in a format requested by the Engineer reflecting the project breakdown per the Caltrans activity codes. They shall show a continuous flow of information from left to right per the project sorting and grouping codes; e.g., project milestones, submittals sub-grouped by description, and the construction activities sub-grouped by the scope breakdown structure. The primary paths of criticality shall be clearly and graphically identified on the diagrams or charts. The network diagram or bar chart shall be prepared on E-size sheets (910-mm by 1200-mm), shall have a title block in the lower right-hand corner, and a timeline on each page. Exceptions to the size of the network sheets and the use of computer graphics to generate the networks or bar charts shall be subject to the approval of the Engineer.

Schedule network diagrams the tabular reports shall be submitted to the Engineer for acceptance in the following quantities:

- A. 2 sets of the Network Diagrams or Bar Charts;
- B. 2 copies of the tabular reports (215-mm x 915-mm size); and
- C. 2 copies on electronic medium, each with a backup of the current schedule file.

WEEKLY SCHEDULE MEETINGS

The Engineer and the Contractor shall hold weekly scheduling meetings to discuss the near term schedule activities, to address any long-term schedule issues, and to discuss any relevant technical issues. The Contractor shall develop a rolling 4-week schedule identifying the previous week worked and a 3-week look ahead. It shall provide sufficient detail to include the actual and planned activities of the Contractor and all the subcontractors for offsite and construction activities, addressing all activities to be performed and to identify issues requiring engineering action or input.

Each activity in the 4 week rolling schedule should be identified by an associated CPM schedule activity ID numbering system. This schedule should not be hand written. The Contractor shall utilize a schedule layout as acceptable by the Engineer. The schedule shall be electronically submitted to the Engineer one day prior to the scheduled meeting date.

MONTHLY CASH FLOW REPORTS

The Contractor shall allocate a portion of each bid item cost to the appropriate schedule activities. A minimum of one activity shall be added to the schedule for each bid item. The total of all activity costs shall equal the total contract bid amount. This information shall be sufficient to generate a monthly cash flow report showing the anticipated monthly contract progress payments. The format for the report shall be acceptable to the Engineer. Actual Progress Payments shall be made in accordance with Standard Specification 9-1.06, Partial Payments.

MONTHLY UPDATE SCHEDULES

The Contractor shall submit a Monthly Update Schedule to the Engineer once in each month within 5 days of the data date. The proposed update schedule prepared by the Contractor shall include all information available as of the 20th calendar day of the month, or other data date as established by the Engineer. A detailed list of all proposed schedule changes such as logic, duration, lead/lag, forecast completion date, additions and deletions shall be submitted with the update.

The Monthly Update Schedule submitted to the Engineer will be accompanied by a Schedule Narrative Report. The report shall describe the physical progress during the report period, plans for continuing the work during the forthcoming report period, actions planned to correct any negative float, and an explanation of potential delays or problems and their estimated impact on performance, milestone completion dates, forecast completion date, and the overall project completion date. In addition, alternatives for possible schedule recovery to mitigate any potential delay or cost increases shall be included for consideration by the Engineer. The report shall follow the outline set forth below:

Contractor's Schedule Narrative Report Outline:

- A. Contractor's Transmittal Letter;
- B. Work completed during the period;
- C. Description of the current critical path;
- D. Description of current problem areas;
- E. Current and anticipated delays;
 - 1. Cause of the delay;
 - 2. Corrective action and schedule adjustments to correct the delay; and
 - 3. Impact of the delay on other activities, milestones, and completion dates;
- F. Changes in construction sequences;
- G. Pending items and status thereof;
 - 1. Permits;
 - 2. Change Orders;
 - 3. Time Extensions; and
 - 4. Non-Compliance Notices;
 - 5. Notice of Potential Claims
- H. Contract completion date(s) status;
 - 1. Ahead of schedule and number of days; and
 - 2. Behind schedule and number of days; and
- I. Include updated Network Diagram and Reports.
- J. Response to Previous Schedule Comments

Portions of the network diagram on which all activities are complete need not be reprinted and submitted in subsequent updates. However, the submitted schedule and the related reports shall constitute a clear record of progress of the work from award of contract to final completion.

On a date determined by the Engineer, the Contractor shall meet with the Engineer to review the monthly schedule update. At the monthly progress meeting, the Contractor and the Engineer shall review the updated schedule and shall discuss the content of the Narrative Report. The Engineer will be allowed 10 days after the meeting to review and accept or reject the update schedule submitted. Rejected schedules shall be resubmitted to the Engineer within 5 days, at which time a new 5-day review period by the Engineer will begin. All efforts shall be made between the Engineer and the Contractor to complete the review and the acceptance process prior to the next update schedule data date. To expedite the process, a second meeting between the Engineer and the Contractor may be held.

SCHEDULE REVISIONS

If the Contractor desires to make a change to the accepted schedule, the Contractor shall request permission from the Engineer in writing, stating the reasons for the change, and proposed revisions to activities, logic and duration. The Contractor shall submit for acceptance an analysis showing the effect of the revisions on the entire project. The analysis shall include:

- A. An updated schedule not including the revisions. The schedule shall have a data date just prior to implementing the proposed revisions and includes a project completion date;

- B. A revised schedule that includes the proposed revisions. The schedule will have the same data date as the updated schedule and include a project completion date;
- C. The Contractor should add resources for all new activities, also adjust resources for those activities that their remaining duration were changed;
- D. A narrative explanation of the revisions and their impact to the schedule;
- E. Computer files of the updated schedule and the revised schedule sequentially numbered or renamed for archive (record) purposes.

The Engineer will provide a response within 10 days to Contractor's proposed schedule revisions.

Within 15 calendar days, the Contractor shall submit a revised CPM network for approval when requested by the Engineer, or when any of the following occurs:

- A. There is a significant change in the Contractor's operations that will affect the critical path;
- B. The current updated schedule indicates that the contract progress is 4 weeks or more behind the planned schedule, as determined by the Engineer; or
- C. The Engineer determines that an approved or anticipated change will impact the critical path, milestone or completion dates, contract progress, or work by other contractors.

The Engineer shall be allowed 10 days to review and accept or reject a schedule revision. Rejected schedule revisions shall be revised and resubmitted to the Engineer within 10 days, at which time a new 10-day review period by the Engineer will begin. Only upon approval of a change by the Engineer shall it be reflected in the next schedule update submitted by the Contractor. The revised schedule shall also include a narrative explanation of the revisions and their impact to the schedule.

TIME IMPACT ANALYSIS

When the Contractor requests a time adjustment due to contract change orders or delays or if the Contractor or the Engineer considers that an approved or anticipated change will impact the critical path or contract progress, the Contractor shall submit to the Engineer a written Time Impact Analysis illustrating the impact of each change or delay on the current scheduled completion date or milestone completion date, utilizing the current accepted schedule. Each Time Impact Analysis shall include a schedule update and schedule revision, both with the same data dates, demonstrating how the Contractor proposes to incorporate the change order or delay into the current schedule. The schedule revision shall include the sequence of activities and any revisions to the existing activities to demonstrate the impact of the delay, or change into the schedule. The Time Impact Analysis shall also include proposed mitigation measures or work around including but not limited to alternate work calendars, re-sequencing of other activities, or performing work activities out-of-sequence to minimize the impact of the change order or the disrupted activities.

Each Time Impact Analysis shall demonstrate the estimated time impact based on the events of delay, the anticipated or actual date of the contract change order work performance, the status of construction at that point in time, and the event time computation of all activities affected by the change or delay. The event times used in the analysis shall be those included in the latest update of the current schedule in effect at the time the change or delay was encountered.

Time extensions will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total or remaining float along the critical path of activities from the time of actual delay, or from the time the contract change order work is performed. Mitigation measures shall be included in the analysis. Time extensions will not be granted nor will delay damages be paid unless:

- A. The delay is beyond the control and without the fault or negligence of the Contractor and its subcontractors or suppliers, at any tier; and
- B. The delay extends the actual performance of the work beyond the applicable scheduled contract completion date and the most recent date predicted for completion of the project on the accepted schedule update.

Time Impact Analyses shall be submitted in triplicate within 15 days after the delay occurs or after issuance of the contract change order. The schedule files will be submitted on electronic medium along with the Time Impact Analysis.

The response to each Time Impact Analysis by the Engineer will be made within 15 days after receipt of the Time Impact Analysis. Resolution of each Time Impact Analysis by the Engineer shall be completed after all effects of the disruption are documented, which may include mitigation measures. A copy of the Time Impact Analysis accepted by the Engineer shall be returned to the Contractor and the accepted schedule revisions illustrating the impact of the contract change orders or delays shall be incorporated into the project schedule during the first update after acceptance. Until such time that the Contractor provides the analysis, the Engineer may, at his option, construct and utilize the project as-built schedule or other method to determine adjustments in contract time.

FINAL SCHEDULE UPDATE

Within 15 days after the acceptance of the contract by the Director, the Contractor shall submit a final update of the schedule with actual start and actual finish dates for all activities. This schedule submission shall be accompanied by a certification, signed by an officer of the company and the Contractor's Project Manager stating "To the best of my knowledge, the enclosed final update of the project schedule reflects the actual start and completion dates of the activities contained herein."

EQUIPMENT AND SOFTWARE

The Contractor shall provide for the State's exclusive possession and use a complete computer system specifically capable of creating, storing, updating and producing CPM schedules utilizing the latest hardware and software technology. Before delivery and setup of the computer system, the Contractor shall submit to the Engineer for approval a detailed list of all computer hardware and software the Contractor proposes to furnish. The minimum computer system to be furnished shall include the following:

- A. Complete computer system, including keyboard, mouse, 530-mm color SVGA monitor (1,024x768 pixels), current Intel Pentium IV micro processor chip, or equivalent or later;
- B. Computer operating system software, compatible with the selected processing unit, for Windows NT/Windows 2000, equivalent;
- C. Minimum one hundred twenty eight (128) megabytes of random access memory (RAM);
- D. A 20 gigabyte minimum hard disk drive, a 1.44 megabyte floppy disk drive, 32x speed minimum CD-RW drive, Ethernet card, two UBCUSB ports, and 56k modem;
- E. A color-ink-jet plotter with a minimum 36 Megabytes RAM, capable of 300 dots per inch color, 600 dots per inch monochrome, or equivalent. Capable of printing fully legible, time scaled charts, and network diagrams, in four colors, with a minimum size of 910-mm by 1200-mm (E size) and is compatible with the selected system. Plotter paper and ink cartridges will be provided throughout the contract. HP Designjet 1055 CM, equivalent or later
- F. CPM software shall be Primavera Project Planner, Version 3.1 , or later;
- G. Scheduler Analyzer Pro or equivalent – a suite of programs to assist in schedule analysis, the latest version for Windows NT/ Windows 2000, or later and,
- H. Microsoft Office software, the latest version for Windows NT/Windows 2000, or later, and McAfee Virus software or equivalent.

The computer hardware and software furnished shall be compatible with that used by the Contractor for the production of the CPM progress schedule required by the Contract, and shall include original instruction manuals and other documentation normally provided with the software.

The Contractor shall furnish, install, set up, maintain and repair the computer hardware and software ready for use at a location determined by the Engineer. The hardware and software shall be installed and ready for use within 30 days of the contract award. The Contractor shall provide 24 hours of formal training for the Engineer, and three other agents of the department designated by the Engineer, in the use of the hardware and software to include schedule analysis, reporting, and resource and cost allocations. An authorized vendor of Primavera Project Planner shall perform the training.

All computer hardware and software furnished shall remain the property of the Contractor and shall be removed by the Contractor upon acceptance of the contract when no claims involving contract progress are pending. When claims involving contract progress are pending, computer hardware or software shall not be removed until the final estimate has been submitted to the Contractor.

PAYMENT

Progress schedule (critical path method) will be paid for at a lump sum price. The contract lump sum price paid for progress schedule (critical path method) shall include full compensation for all labor, materials (including computer hardware and software), tools, equipment, and incidentals; and for doing all the work involved in preparing, furnishing, updating and revising CPM progress schedules. Also for maintaining and repairing the computer hardware and training the Engineer in the use of the computer hardware and software as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Payments for progress schedule (critical path method) will be made as follows:

- A. Interim baseline schedule accepted, then 10 percent payment for progress schedule (critical path method) will be made.
- B. Baseline schedule accepted, then 10 percent payment for progress schedule (critical path method) will be made.
- C. Monthly update schedules accepted, then 75 percent payment for progress schedule (critical path method) will be made equally for each update.
- D. Final schedule update accepted, then 5 percent payment for progress schedule (critical path method) will be made.

The Department will retain an amount equal to 25 percent of the estimated value of the work performed during the first estimate period in which the Contractor fails to submit an interim baseline, baseline, revised or updated CPM schedule conforming to the requirements of this section, as determined by the Engineer. Thereafter, on subsequent successive estimate periods the percentage the Department will retain will be increased at the rate of 25 percent per estimate period in which acceptable CPM progress schedules have not been submitted to the Engineer. Retention's for failure to submit acceptable CPM progress schedules shall be additional to all other retention's provided for in the contract. The retention for failure to submit acceptable CPM progress schedules will be released for payment on the next monthly estimate for partial payment following the date that acceptable CPM progress schedules are submitted to the Engineer.

The adjustment provisions in Section 4-1.03, "Changes," of the Standard Specifications, shall not apply to the item of progress schedule (critical path method). Adjustments in compensation for the project schedule will not be made for any increased or decreased work ordered by the Engineer in furnishing project schedules.